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केन्द्रीय विद्यालय संगठन

**An Investigatory Project Report**  
**on**

**“Railway Reservation system”**

**for**

**AISSCE Practical Examination 2020-21**  
[As a part of the subject Computer Science (083)]

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# Acknowledgement

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Above all, we would like to thank our school, our parents who always inspired us always in all endeavours.

**Thanks everyone!**

.....

**Class – XII-A**

# Laboratory Certificate

*This is to certify that **Master**  
..... of Class XII –A has  
successfully completed his project work on  
“**Railway Reservation System**” in **Computer**  
**Science (Code 083)** and here by submitting his  
report as an evidence of the project work for the  
session 2020-21.*

**Mr. Sameer Verma**

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## **Railway Reservation system:-**

### **Description:**

This is a python and mysql connectivity program which deals with the online reservation of railway tickets. At first it asks the persons details (pnr, Name, Berth preference, date of Reservation and date of journey.)

# ***Introduction:***

## **Need of connectivity:**

When we design real-life applications, we are bound to encounter situations wherein we need to manipulate data stored in a database through an application designed by us. So today we will discuss how we can connect to MySQL database from within a Python script.



## Steps for Creating Database Connectivity Applications

- Start Python
  - Import database packages required programming.
  - Open a connection to database
  - Create a cursor instance
  - Execute a query
  - Extract data from result set
  - Clean up the environment
- **Import Packages required for database programming**

We need to import **mysql.connector** package in our Python scripts. Using following command:

```
import mysql.connector
```

OR

```
import mysql.connector as sqlcon
```

➤ **Open a connection to mysql database**

Next, we need to establish connection to a mysql database using connect() function of mysql.connector package in our Python scripts. Using following command:

```
MyCon = mysql.connector.connect(  
host="localhost", user="root",  
passwd="root", database="School")
```

OR

```
MyCon = sqlcon.connect(  
host="localhost", user="root",  
passwd="root", database="School")
```



➤ **Checking for a successful connection to mysql database**

We can check for a successful connection to a mysql database using `is_connect()` function with connected object as follow:

```
MyCon      =      mysql.connector.connect(  
host="localhost",                      user="root",  
passwd="root", database="School")
```

```
if MyCon.is_connect():
```

```
    Print("successfully connected")
```

```
else:
```

```
    print("Connection failed")
```

## ➤ **Create a cursor Instance**

- A Database cursor is a special control structure that facilitates the row by row processing of records in the resultset ( i.e. , the set of records retrieved as per query.)
- *The cursor Instance is created as follows:*

*Cursor = MyCon.cursor()*

Here Cursor is a cursor object

## ➤ **Executing a SQL Query**

- We can execute an SQL Query using execute () function with cursor object as follows:



- **E.g.**

*cursor.execute("Select \* from Stud")*

The above command will execute the given SQL query and store the records (i.e. resultset) in the cursor object (i.e. cursor) which can be used in program/scripts as required.

➤ **Extracting Data from a Resultset**

- We can extract the data from the resultset using any of the following fetch...() function:
- `Data = cursor.fetchall()`: it will return all records retrieved as per query in a tuple (data) form.
- `Data = cursor.fetchone()` it will return one record from resultset as a tuple or a

list. This method returns one record as a tuple: if there are no more records it returns None

- `Data = cursor.fetchmany(n)` it accepts no of records (n) to fetch and returns a tuple where each record itself is a tuple. if there are no more records it returns empty tuple
- `Var = cursor.rowcount`: this property returns the no of rows retrieved from cursor so far.

### ➤ **Clean up the Environment:**

- Once all the processing is over , we need to close the connection established, as follows:

*`MyCon.close()`*



## SQL Table Used: Reservation

```
mysql> desc reservation;
```

Field	Type	Null	Key	Default	Extra
pid	char(5)	NO	PRI	NULL	
name	char(20)	NO		NULL	
age	decimal(2,0)	NO		NULL	
birth_preference	char(2)	YES		NULL	
date_of_booking	char(10)	NO		NULL	
travelling_date	char(10)	YES		NULL	

6 rows in set (0.01 sec)

***Program***

***Coding***



```

# importing mysql.connector
import mysql.connector as myc

# Opening a connection to MySQL Database
mys=myc.connect(host="localhost",user="root",passwd="root",database="practicle")

# Testing the whether connection is successful or not
if mys.is_connected()==True:
    print("connection established")
else:
    print("connection not established")

# creating cursor
cur=mys.cursor()

# functions starts from here
def new_reservation():
    # inserting new record to table
    print("#####")
    print("#####")
    print("##          **** Railway Reservation system ****          ##")
    print("#          New Reservation Data Entry Screen          #")
    print("+++++++\n")
    pnr1=input("Enter PNR(passanger name record) : ")
    name1=input("Enter Name : ")
    age1=int(input("Enter your age : "))
    berth_preference1=input("enter berth preference :")
    date_of_booking1=input("Enter Date(yyyy-mm-dd) of Booking : ")
    travelling_date1=input("Enter Date (yyyy-mm-dd) FOR booking : ")

    data="insert into reservation
    (pnr,name,age,berth_preference,date_of_booking,travelling_date)
    values('0','0','0','0','0','0')".format(pnr1,name1,age1,berth_preference1,date_of_booking1,travelli
    ng_date1)

    cur.execute(data)

```

```

# Committing the changes made to table
mys.commit()
print("Reservation is Successful....")
# Function new_reservation is OVER
def get_info():
    #it will be done by fetching record
    command="select * from reservation"
    #executing the command
    cur.execute(command)
    print("#####")
    print("##              Railway Reservation System              ##")
    print("##              Railway Reservation details              ##")
    print("_____")
    print("=====")
    print("PNR", " Name", "Age", " berth_pref", " booking_dt", "Travelling_dt")
    print("=====")
    #Extracting Data from the cursor one by one using fetch...() function
    details=cur.fetchone()
    while details:
        for i in details:
            print(i,end="\t") #for data of a person in one row
        print()
        details=cur.fetchone()
    print("#####")
#function getinfo is OVER
import random
def cancel_reservation():
    print("#####")
    print("##              Railway Reservation System              ##")

```



```

print("##                                Reservation cancellation Screen                                ##")
print("=====\\n")

pnr1 =input("Enter pnr :")
details ="Select * from reservation where pnr={}" .format(pnr1)
cur.execute( details)
data=cur.fetchone()
if data==None:
    print("NO such reservation is made")
    print("Plz Try again with a valid PNR..")
else:
    y=random.randint(100,999)#Making the OTP
    print("your one time password: ",y)
    n=int(input("Enter one time pssword:"))
    if n==y:
        print("cancelling reservation... ")
        print(data)
        k=input("press ENTER key to proceed...")
        cur.execute("delete from reservation where pnr = {}".format(pnr1))
        mys.commit()
        print("Reservation Successfully cancelled ...")
    else:
        print("your entered otp didn't match...")
        print("retry...")
#cancel_reservation is OVER
def ModiRes():
    print("#####")
    print("##                                Railway Reservation System                                ##")
    print("##                                Reservation modification Screen                                ##")

```

```

print("=====\\n")
pnr1 =input("Enter pnr :")
command = "Select * from reservation where pnr ={}".format(pnr1)
cur.execute(command)
data=cur.fetchone()
If data==None:
    print("\\n No such reservation exist..")
    print("\\n Plz Try again with a valid pnr..")
else:
    print("\\nFollowing Reservation is being Modified\\n ")
    print(data)
    k=input("\\nPress ENTER key to Proceed.....")
    print("\\n **** Now Enter New Details *** ")
    name=input("Enter Name : ")
    age=int(input("Enter your age : "))
    berth_preference=input("enter berth preference :")
    date_of_booking=input("Enter Date(yyyy-mm-dd) of Booking : ")
    Travelling_date=input("Enter Date (yyyy-mm-dd) For booking : ")
    k=input("\\nPress Enter key to Proceed.....")
    #command for update
    command="update reservation set
name='{}',age={},berth_preference={},date_of_booking={},Travelling_date={} where
pnr='{}'.format(name,age,berth_preference,date_of_booking,Travelling_date,pnr1)
    #executing command
    cur.execute(command)
    mys.commit()
    print("\\nreservation Successfully Modified ...")

```



#main program

while True:

```
print("#####")
print("###          WELCOME          ###")
print("###          Railway Reservation System          ###")
print("#####")
print("###          **** MAIN- MENU ****          ###")
print("###          =====          ###")
print("### 1.....apply for reservation          ###")
print("### 2.....show reservation records          ###")
print("### 3.....cancel reservation          ###")
print("### 4.....update reservation Record          ###")
print("### 5.....Exit          ###")
print("###          **** ****          ###")
print("#####\n")
ch= int(input("\n\t Enter Your Choice(1..5) :"))
print("#####")
if ch==1:
    new_reservation()

elif ch==2:
    get_info()

elif ch==3:
    cancel_reservation()

elif ch==4:
    ModiRes()
```

```
elif ch==5:
```

```
    mya.close()
```

```
    break
```

```
else:
```

```
    print("Invalid Choice ...piz enter a valid choice..")
```

```
k=input("Press enter key to go to Main Menu....") # to hold the screen
```



Sample

outputs

# ***Output screendescrining the table***

```
mysql> desc reservation;
```

Field	Type	Null	Key	Default	Extra
pnr	char(5)	NO	PRI	NULL	
name	char(20)	NO		NULL	
age	decimal(2,0)	NO		NULL	
berth_preference	char(2)	YES		NULL	
date_of_booking	char(10)	NO		NULL	
travelling_date	char(10)	YES		NULL	

```
6 rows in set (0.01 sec)
```



# Main menu

```
#####
###                               ###
###           W E L C O M E           ###
###       Rilway  Reservation  system       ###
#####
###          ****  M A I N - M E N U  ****          ###
###          =====          ###
###  1.....apply for reservation          ###
###  2.....show reservation records          ###
###  3.....cancel reservation          ###
###  4.....update reservation Record          ###
###  5.....Exit          ###
###          ****  ****  ****          ###
#####
```

Enter Your Choice(1..5) : |

Choice.. 1.....new reservation

```
#####
###                               ###
###           W E L C O M E           ###
###       Rilway  Reservation  system       ###
#####
###       ****  M A I N - M E N U  ****       ###
###       =====                       ###
###  1.....apply for reservation       ###
###  2.....show reservation records       ###
###  3.....cancel reservation           ###
###  4.....update reservation Record       ###
###  5.....EXIT                           ###
###       ****  ****  ****  ****  ****  ****  ###
#####
```

Enter Your Choice(1..5) :1

```
#####
#####
#####
##       ****  Railway  Reservation  system  ****       ##
#       New Reservation  Data Entry Screen       #
+++++
```

Enter PNR(pessanger name record) : 1

Enter Name : vaibhav

Enter your age : 12

enter berth preference :b

Enter Date(yyyy-mm-dd) of Booking : 2020-01-05

Enter Date (yyyy-mm-dd) FOR booking : 2020-02-05

Reservation is Successful....

Press enter key to go to Main Menu....



Choice...2.....show

```

#####
#####          W E L C O M E          #####
#####      Railway Reservation system      #####
#####          ***** MAIN - MENU *****          #####
#####          =====          #####
#####      1.....apply for reservation          #####
#####      2.....show reservation records          #####
#####      3.....cancel reservation          #####
#####      4.....update reservation Record          #####
#####      5.....Exit          #####
#####      *****          #####
#####          #####
#####

```

```

Enter Your Choice(1..5) :2
#####
#####
#####
##          Railway Reservation System          ##
##          Railway Reservation details          ##

```

PNR	Name	age	berth_pref	booking_dt	Travelling_dt
1	mohit	22	lb	2020-06-12	2020-06-22
11111	shyam	37	ub	2020-05-01	2020-05-01
11112	radhe	55	mb	2020-01-01	2020-01-29
11113	mohan	45	lb	2020-05-05	2020-05-28
11114	yogya	23	ub	2020-10-23	2020-10-27
11115	rohit	27	mb	2020-11-12	2020-11-22
11116	manish	22	mb	2020-07-11	2020-07-22
11117	sonit	26	ub	2020-12-25	2020-01-13
11118	shiva	99	ub	2020-12-18	2020-01-01
11119	vimal	15	ub	2020-05-06	2020-05-15
11120	komal	23	lb	2020-08-08	2020-08-19
11121	geeta	18	ub	2020-12-12	2020-12-31

\*\*\*\*\*  
Press enter key to go to Main Menu....

In sql:-

[illegible]



Choice...3.....cancel:

```

WELCOME
Railway Reservation system

**** MAIN - MENU ****
=====
1.....apply for reservation
2.....show reservation records
3.....cancel reservation
4.....update reservation Record
5.....Exit
**** **

```

Enter Your Choice(1..5) :3

```
Enter Your Choice(1-3) : 3
#####
#####
#####
Railway Reservation System
Reservation cancellation Screen
#####
```

```
Enter pin :1
your one time password: 151
Enter one time pssword:151
cancelling reservation...
('1', 'mohit', Decimal('22'), '1b', '2020-06-12', '2020-06-12')
press ENTER key to proceed...
Reservation Successfully cancelled ...
Press enter key to go to Main Menu....
```

Enter Your Choice(1..5) :3

```

Enter Your Choice(1..5) :5
#####
#####
##          Railway Reservation System          ##
##          Reservation cancellation Screen      ##
#####

```

Enter pnr :65654  
NO such reservation is made  
Plz Try again with a valid PNR..  
Press enter key to go to Main Menu....



Choice...4.....modify:

```
#####
WELCOME
Railway Reservation system
#####
**** MAIN - MENU ****
=====
1.....apply for reservation
2.....show reservation records
3.....cancel reservation
4.....update reservation Record
5.....EXIT
**** **
#####
```

```
Enter Your Choice(1..5) :4
#####
Railway Reservation System
Reservation modification Screen
=====
```

Enter pnr :11120

Following Reservation is being Modified

('11120', 'komal', Decimal('23'), '1b', '2020-08-08', '2020-08-19')

Press ENTER key to Proceed.....

\*\*\*\* Now Enter New Details \*\*\*\*

Enter Name : komal

Enter your age : 23

enter berth preference :ub

Enter Date(yyyy-mm-dd) of Booking : 2020-08-08

Enter Date (yyyy-mm-dd) For booking : 2020-08-19

Press Enter key to Proceed.....

reservation Successfully Modified ...

Press enter key to go to Main Menu....|

Enter Your Choice(1..5) :4

```
#####
Railway Reservation System
Reservation modification Screen
=====
```

Enter pnr :84848

No such reservation exist..

Plz Try again with a valid pnr..

Press enter key to go to Main Menu....